

What is claimed is:

1. An air conditioner for a vehicle, comprising:

a compressor for compressing and discharging refrigerant in a refrigerant cycle;

an interior heat exchanger that performs a heat exchange between the refrigerant circulated by operation of the compressor and air to be blown into a vehicle compartment; and

a control unit for controlling a work amount of the compressor, wherein:

the control unit has a target work amount calculating means for calculating a target work amount of the compressor per a regular time based on a heat load of the interior heat exchanger;

the compressor is controlled by the control unit to perform a normal control where the compressor is operated based on the target work amount, and a cut control where the work amount of the compressor is forcibly reduced smaller than the target work amount; and

the control unit corrects the target work amount calculated by the target work amount calculating means based on the heat load to be increased immediately after the cut control, when the normal control is performed after the cut control is performed for a predetermined time.

2. The air conditioner according to claim 1, wherein the control unit controls the work amount of the compressor to be forcibly reduced in the cut control, when a running load of

the vehicle exceeds a predetermined load.

3. The air conditioner according to claim 1, wherein the control unit corrects the target work amount of the compressor immediately after the cut control to be increased as the predetermined time is longer.

4. The air conditioner according to claim 1, wherein the control unit corrects the target work amount of the compressor immediately after the cut control to be increased as the work amount of the compressor immediately before the cut control is larger.

5. The air conditioner according to claim 1, wherein the control unit corrects the target work amount of the compressor immediately after the cut control to be increased as the heat load immediately after the predetermined time passes is larger.

6. The air conditioner according to claim 5, wherein the control unit corrects the target work amount of the compressor immediately after the cut control to be increased as an amount of sunlight radiated into the vehicle compartment immediately after the predetermined time passes is larger.

7. The air conditioner according to claim 1, wherein the control unit corrects the target work amount of the compressor immediately after the cut control to be increased up to a

maximum work amount of the compressor.

8. The air conditioner according to claim 1, wherein the control unit corrects the target work amount of the compressor immediately after the cut control to be set at a work amount that is calculated to compensate a shortage of the work amount due to the cut control within a certain constant time.

9. The air conditioner according to claim 1, wherein the control unit prohibits the cut control while the compressor is controlled based on the target work amount corrected by the control unit.

10. The air conditioner according to claim 1, wherein:
the compressor includes an electric compressor and at least an electric motor for driving the electric compressor;
the control unit changes the work amount by changing a rotation speed of the electric motor;
the target work amount calculating means calculates the rotation speed as the target work amount per the regular time;
and
the control unit corrects the rotation speed immediately after the cut control to be increased.

11. The air conditioner according to claim 10, wherein:
the compressor is disposed to be rotated by a vehicle driving engine in addition to the electric motor.

12. The air conditioner according to claim 1, wherein:
the compressor is a variable displacement compressor which changes the work amount by changing a discharge amount per rotation;

the target work amount calculating means calculates the discharge amount as the target work amount per the regular time; and

the control unit corrects the discharge amount immediately after the cut control to be increased.

13. The air conditioner according to claim 1, wherein:
the target work amount calculating means calculates a target temperature of the interior heat exchanger as the target work amount per the regular time;

the compressor is disposed to be driven by a driving engine through an interrupting member so that an actual temperature of the interior heat exchanger approximates to the target temperature; and

the control unit performs at least one of a correction for reducing the target temperature immediately after the cut control in a cooling operation where the interior heat exchanger cools air, and a correction for increasing the target temperature immediately after the cut control in a heating operation where the interior heat exchanger heats air.

14. The air conditioner according to claim 13, wherein:

the compressor is disposed to be driven by an electric motor in addition to the driving engine.